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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,345	.11/27/2000	Jean-Pierre Ferray	MATR-0002-US	5978

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HOUSTON, TX 77024

EXAMINER

LELE, TANMAY S

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 05/08/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	09/723,345		FERRAY, JEAN-PIERRE	
	Examiner		Art Unit	
	Tanmay S Lele		2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: reads “as claimed in any one of the preceding claim 1.” For purposes of examination it was assumed that the claim read, “as claimed in claim 1.” Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Lowdon (Lowdon, US Patent 6,073,019) in view of Harjula et al. (Harjula, WIPO, WO 98/35511).

Regarding claim 1, Lowdon teaches of a mobile communication system, comprising runs of loss cable disposed in succession along a zone of radio coverage and feeder means for feeding the cable runs from base stations of at least one cellular mobile communication network (as seen in Figure 1), wherein the feeder means have means for applying first radio frequency signals from a first base station of the cellular mobile communication network to a first cable run (column 1, lines 44 – 54; note that all fields, signals, and frequencies are all EM waves and thus synonymous with one another), and means for applying second radio frequency signals from a second base station of the cellular mobile communication network to a second cable run (column 1, lines 44 – 54; note that all fields, signals, and frequencies are all EM waves and thus

synonymous with one another), which is adjacent to the first run (as seen in Figure 1 and column 1, lines 44 – 54).

Lowdon does not specifically teach of wherein the feeder means further have means for applying at least part of the second radio frequency signals to the first cable run.

In a related art dealing with handover in a rail environment, Harjula teaches of wherein the feeder means further have means for applying at least part of the second radio frequency signals to the first cable run (page 8, paragraph 1).

It would have been obvious to one skilled in the art at the time of invention to have combined Lowdon's underground mobile communication system with Harjula's frequency reuse, for the purpose of facilitating handover in a fast moving railway system, as taught by Harjula.

Regarding claim 2, Lowdon in view of Harjula, teach all the claimed limitations as recited in claim 1. Lowdon further teaches of wherein said part of the second radio frequency signals is applied to the first cable run with a given attenuation relative to the first radio frequency signals as applied to the first cable run (as seen in Figures 1 and 2 and starting column 2, line 64 and ending column 3, line 8).

Regarding claim 3, Lowdon in view of Harjula teach all the all the claimed limitations as recited in claim 1. Lowdon further teaches of wherein the feeder means further have means for applying at least part of the first radio frequency signals to the second cable run with a given attenuation relative to the second radio frequency signals as applied to the second cable run (as seen in Figures 1 and 2 starting column 2, line 64 and ending column 3, line 8; note the directions A and B).

Regarding claim 4, Lowdon in view of Harjula teach all the claimed limitations as recited in claim 1. Harjula further teaches of wherein all the second radio frequency signals are applied to the first cable run (page 8, paragraph 1; note that this is obvious as the same frequency channel is reserved for the next BTS).

Regarding claim 5, Lowdon in view of Harjula teach all the claimed limitations as recited in claim 1. Both Lowdon and Harjula further teach of wherein the part of the second radio frequency signals applied to the first cable run is limited to a frequency carrying a beacon signal from the second base station (Lowdon: column 1, lines 55 – 65 and Harjula: page 8, paragraph 3; note both are mobile assisted handovers and a control channel from the BTS such as the SACCH is well known in the art).

Regarding claim 6, Lowdon in view of Harjula teach all the claimed limitations as recited in claim 1. Lowdon further teaches that wherein the feeder means are set up to apply the radio frequency signals from at least one of the first and second base stations to several adjacent cable runs (as seen in Figure 1 with the over lap in cable runs).

Regarding claim 7, Lowdon in view of Harjula teach all the claimed limitations as recited in claim 1. Harjula further teaches of further having collection means to collect radio signals picked up by the runs of loss cable (starting page 7, paragraph 6 and ending page 8; note that the cables serve as antennas and thus both radiate and receive by reciprocity and thus are obviously collection means), wherein the collection means have means for applying third radio frequency signals from the first cable run to the first base station and means for applying at least part of the third radio frequency signals to the second base station (page 8, paragraph 1 and page 9, paragraphs 1 – 3; note the system allows for multiple mobiles and thus third, fourth, ect signals

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are obvious as well as their transmission and reception on multiple cables as described by Harjula).

Regarding claim 8, Lowdon and Harjula teach all the claimed limitations as recited in claim 1. Lowdon and Harjula further teach that wherein the runs of loss cable extend through tunnels (Lowdon: Figure 1 and column 2, lines 43 – 63 and Harjula: Figure 1 and paragraph 5) and Harjula further teaches wherein the feeder means are positioned outside the tunnels (page 11, paragraph 2).

Citation of Pertinent Prior Art

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Inventor	Publication	Number	Disclosure
Chung et al.	US Patent	6,359,871	Cellular Communications Network
Lowdon	US Patent	5,974,326	System and Method for Channel Allocation in a Radio Telephone System for an Underground Railway
Stolarczyk	US Patent	4,777,652	Radio Communication System for Underground Mines

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30 PM Monday – Thursdays and on alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Nay A. Maung can be reached on (703) 308-7745. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.


Tanmay S Lele
Examiner
Art Unit 2681


NAY MAUNG
PRIMARY EXAMINER

tsl
May 1, 2003